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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,945	12/12/2006	Masakazu Ogasawara	Q97149	5769
23373	7590	09/14/2010	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			CHWASZ, JADE R	
			ART UNIT	PAPER NUMBER
			2872	
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			09/14/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/594,945	<b>Applicant(s)</b> OGASAWARA, MASAKAZU	
	<b>Examiner</b> JADE R. CHWASZ	<b>Art Unit</b> 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 6-25 is/are pending in the application.
- 4a) Of the above claim(s) 12-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 6-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendments to the claims, in the submission dated 8/26/10, is acknowledged and accepted.

### ***Response to Arguments***

2. Applicant's arguments filed 8/26/10 have been fully considered but they are not persuasive. Applicants argue that the prior art cited does not teach or reasonably suggest "a holographic recording layer...and a two-dimensional recording layer being a phase-change film, a pigmented coat, or a magneto-optical recording film that is laminated in a film thickness direction of the holographic recording layer, ... [and] wherein the two-dimensional recording layer senses a second light beam so that a mark is recorded according to change of the physical property of the two-dimensional recording layer." The Examiner respectfully disagrees. Ueda et al. is directed to a hologram recording sheet that comprises two hologram sensitive material layers, sensitive to two different wavelengths (see figure 12; col. 9, line 39 to col. 10, line 41; figures 21-23 additionally show a hologram recording sheet sensitive to three different wavelengths). The two hologram sensitive material layers are pigmented coats each sensitive to a particular wavelength. Since the hologram recording sheet of Ueda et al. senses two beams, first and second marks will be recorded according to a change of the physical property (i.e. the recording of interference fringes in the hologram recording sheet) of the recording medium.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keshner et al. (6,310,844) in view of Ueda et al. (7,132,200) and Hays et al. (5,777,760).

Consider claim 1, Keshner et al disclose (e.g. figure 1) a record carrier having a substrate (114, reference layer) and a reflective layer (115, reflective coating), wherein recording or reproducing of information is performed by light irradiation, characterized by comprising: a two-dimensional recording layer (106, data layer) whose physical property changes in response to light intensity [col. 4, line 31 to col. 5, line 15]. However, Keshner et al. do not disclose that the recording layer comprises two layers wherein one of the layers is a holographic recording layer that reserves an optical interference pattern comprising components of reference light and signal light as a diffractive grating therein; that the two-dimensional recording layer is a phase-change film, a pigmented coat, or a magneto-optical recording film that is laminated in a thickness direction of the holographic recording layer, wherein the optical interference pattern is produced by a first light beam so that a hologram is recorded in the holographic recording layer, wherein the two-dimensional recording layer senses a second light beam so that a mark is recorded on the two-dimensional recording layer

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according to change of the physical property of the two-dimensional recording layer, and wherein the recorded mark of the two-dimensional recording layer includes information for a servo control. Keshner et al. and Ueda et al. are related as recording devices. Ueda et al. teach (e.g. figures 12-13 and 21-23) a holographic recording layer that comprises a layer (e.g. 52, holographic sensitive material) that reserves an optical interference pattern comprising components of coherent reference light and signal light as a diffractive grating therein; and a two-dimensional recording layer (e.g. figures 21-23) being a pigmented coat (hologram sensitive materials for red, blue and green light are coated on the sheet; col. 8, lines 42-67, col. 10, lines 45-61) that is laminated in a film thickness direction of the holographic recording layer (col. 13, lines 12-26), wherein the optical interference pattern is produced by a first light beam (e.g. green light) so that a hologram is recorded in the holographic recording layer. Ueda et al. also disclose that the two-dimensional recording layer (53, holographic sensitive material) senses a second light beam (e.g. red light) so that a mark is recorded on the two-dimensional recording layer according to change of the physical property (i.e. interference fringes are recorded) of the two-dimensional recording layer [col. 9 line 39 to col. 10, line 41]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Keshner et al. to have different recording substrates, as taught by Ueda et al., so that a multiple color holographic display can be formed at a low cost.

However, the Keshner et al. and Ueda et al. do not specifically disclose that the recorded mark of the two-dimensional recording layer includes information for a servo

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control. Keshner et al., Ueda et al., and Hays et al. are related as holographic recording devices. Hays et al. teach (e.g. figures 2-3) a hologram record carrier includes servo blocks (i.e. information for a servo control) that are recorded on a two-dimensional recording layer (38, crystal) [col. 4, lines 37-64]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Keshner et al., Ueda et al. and Hays et al. to have a two-dimensional recording layer, sensitive to two light beams, wherein a recorded mark includes information for a servo control, so that feedback information can be recorded and replayed in a holographic medium. Further, the recorded position feedback information can be used to adjust the reference beam to maximize the signal to noise ratio by reducing cross talk, thereby improving storage capacity.

Consider claim 3, the modified Keshner et al. reference discloses (e.g. figures 12-13 of Ueda et al.) a hologram record carrier wherein the holographic recording layer (52, holographic sensitive material sensitive to green light) has a sensitivity to a wavelength of the first light beam (green light beam) higher than that to a wavelength of the second light beam (i.e. the layer 52 has a sensitivity higher to green light than to red light) and a sensitivity of the two-dimensional recording layer (53, hologram sensitive material sensitive to red light) to a wavelength of the second light beam (red light beam) is set to be higher than a sensitivity to a wavelength of the first light beam (i.e. the layer 53 has a sensitivity higher to red light than to green light [col. 8, lines 42-67, col. 10, lines 45-61 of Ueda et al.]).

Consider claims 6-8, the modified Keshner et al. reference does not disclose a hologram record carrier wherein an end mark, address mark or relational mark indicating an end of a hologram, address of a hologram, information relating to a hologram is recorded on the holographic recording layer at a portion of the two-dimensional recording layer laminated on a portion of the holographic recording layer with the hologram group or group of holograms. Keshner et al., Ueda et al., and Hays et al. are related as recording devices. Hays et al. teaches (e.g. figures 2-3) a hologram record carrier that includes servo blocks (relational marks) recorded on a two-dimensional recording layer carrying information relating to a hologram on a holographic layer [col. 4, lines 4-11, col. 4, line 65 to col. 5, line 15]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of the modified Keshner et al. reference, as taught by Hays et al., so that position feedback information can be recorded and replayed in a holographic medium. Official Notice is taken. Although Hays et al. does not specifically disclose that the servo blocks could be end marks indicating an end of a hologram, an address mark indicating an address of a hologram; it is well known that servo blocks provide feedback to help control mechanical position or other parameters. End marks and address marks are examples of various parameters that can be recorded in the medium so that feedback can be provided to control mechanical position of the optical device. Further, one of ordinary skill in the art at the time the invention was made would have been motivated to have the servo blocks contain information relating to end marks and address marks

so that the position of the optical disk can be controlled to record/reproduce high quality holograms.

Consider claim 9, the modified Keshner et al. reference discloses (e.g. figures 2 and 4 of Keshner et al.) a hologram record carrier wherein the reflective layer (115, reflective coating) has tracks (200, spiral tracks) extending such that they separate from each other without crossing one another for tracking a spot of the light beam that passes from an objective lens (118, objective lens) through the holographic recording layer and the two-dimensional recording layer to be focused [col. 6, lines 22-40 of Keshner et al.].

Consider claim 10, the modified Keshner et al. reference discloses (e.g. figures 2 and 4 of Keshner et al.) a hologram record carrier wherein the tracks (200, spiral tracks) are formed spirally.

Consider claim 11, the modified Keshner et al. reference discloses (e.g. figures 2 and 4 of Keshner et al.) a hologram record carrier wherein the tracks are formed in parallel (the tracks do not intersect).

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within



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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JADE R. CHWASZ whose telephone number is (571)272-8199. The examiner can normally be reached on Monday to Friday 6:00 am - 3:30 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRC

/Jade R Chwasz/  
Examiner, Art Unit 2872

/Stephone B. Allen/  
Supervisory Patent Examiner, Art Unit 2872